

QUIZES

ADVENTURES IN THE WORLD OF SCIENCE

ART

FACT FILES ON:

- ▶ Forgery
- ▶ Security and preservation
- ▶ Art in Space
- ▶ Hi-tech restoration
- ▶ Beauty in nature
- ▶ New wave art

MORE Q&A CARDS

48



GIANT POSTER

ROBOTS FROM HELL

SCIENTIFIC EXPERIMENTS



INSIDE THIS PACK

FACT FILES

- The art of nature ► Sound and images in Space ► How to paint by computer
- Saving crumbling books ► Restoration techniques
- Detecting forgeries



More In-Quest Q & A cards



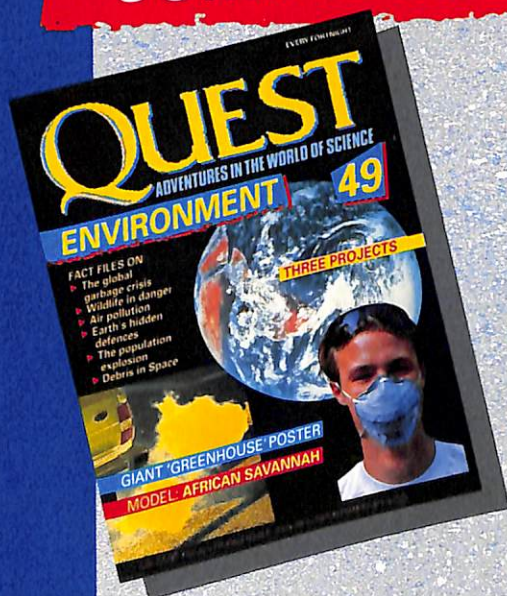
POSTER

Hi-tech performance art

THREE EXPERIMENTS



COMING IN QUEST 49 ENVIRONMENT

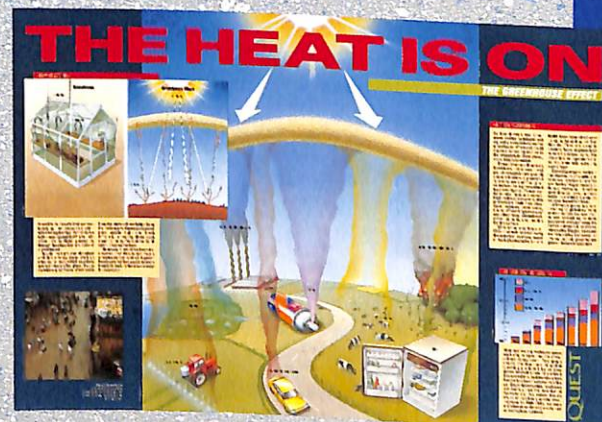
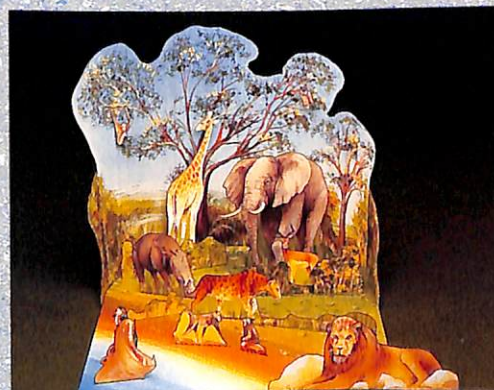


MODEL

African wildlife

FACT FILES INCLUDE:

- The global garbage crisis
- Wildlife in danger
- Air pollution
- Earth's hidden defences
- New environments
- Population explosion



POSTER

The global greenhouse

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Copy your favourite pictures – and make them bigger or smaller.

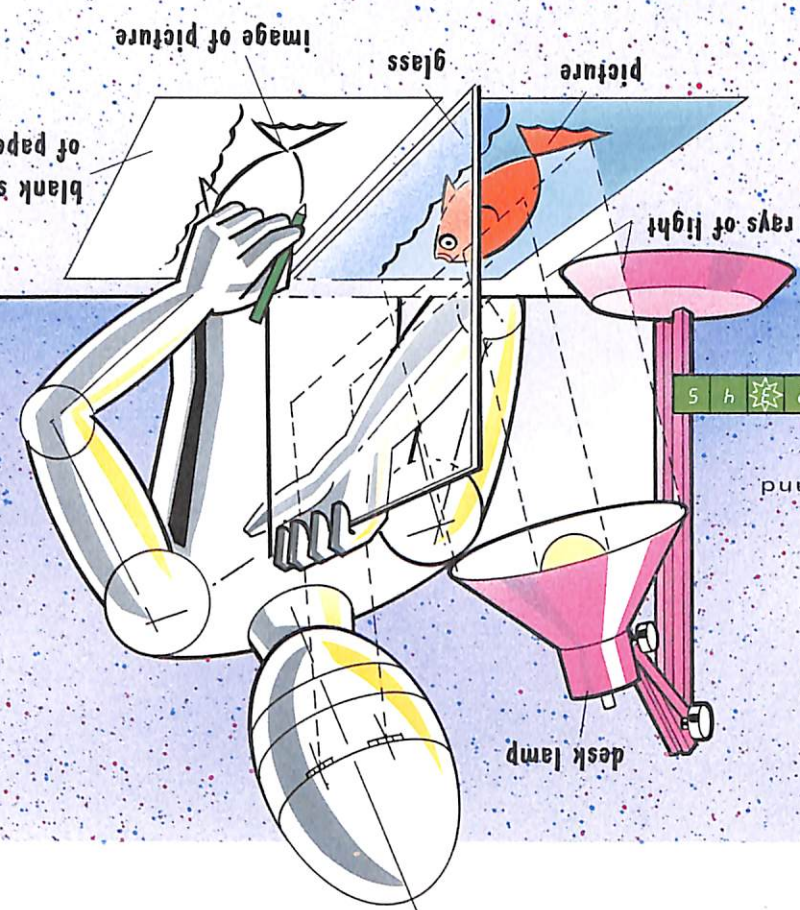
INSTANT ART

1 2 3 4 5

By using the light-reflecting properties of a sheet of glass you can copy any picture.

You need a picture to copy, a piece of glass measuring roughly 20 x 25 cm, a sheet of paper, a pencil or pen and a desk lamp. Put the picture to be copied and the blank sheet of paper beside each other. Shine the light from the lamp on to the picture. Hold the glass upright with your left hand (or right hand if you are left-handed), between the paper and the picture. Look through the glass from the side nearest the picture, shifting the position of your head until you can see an image of the picture on the paper on the other side of the glass.

Trace the outlines of the image on to the paper with your free hand. To enlarge or reduce the image on the paper, move the top edge of the glass backwards or forwards so it is at an angle to the table top.

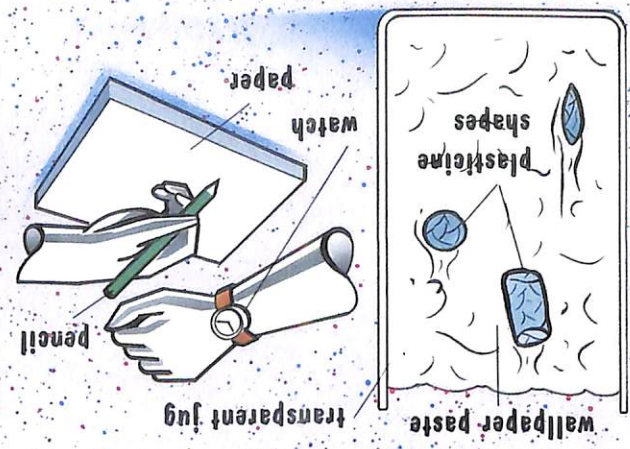


ADVENTURES IN THE WORLD OF SCIENCE

STREAMLINING

1 2 3 4 5

You need the tallest transparent jug or measuring cylinder you can find, some wallpaper paste and water, about 250 gm of plasticine and a watch with a second hand. Mix the paste and the water until you have a thick liquid. Fill the jug with the mixture. Divide the plasticine into three equal pieces. Form the first into a ball, the second into a cylinder and the third into a bullet shape. Hold the first shape just above the surface, then let it go. Time how long it takes to reach the bottom of the liquid. Repeat twice, then record the average time. Do this again with the second and third shapes and then compare the results. Which is the quickest? It is the most streamlined shape.

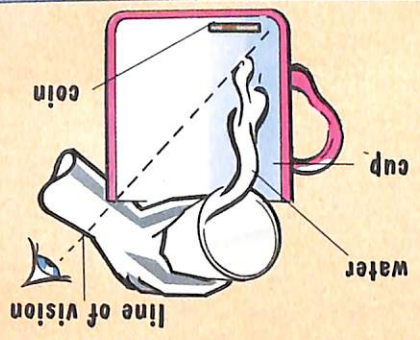


WARNING!

1 2 3 4 5

Each QUEST project and model has its own difficulty rating: 1 very simple, 2 simple, 3 intermediate, 4 advanced, 5 complicated. Every care has been taken to ensure projects are as safe as possible. However, parents should supervise all projects. The publisher can accept no liability for injury.

PROJECT INFORMATION



BENDING LIGHT

1 2 3 4 5

You need a cup, a coin and a glass of water. Place the coin in the bottom of the cup. Then, keeping your eyes on the coin and your head still, gradually move the cup backwards until you can no longer see the coin. Now, carefully pour the water into the cup, without moving the position of your head. The coin will suddenly reappear. This is because the water in the cup bends the rays of light.

DATAQUEST

CONSTRUCTIONS II: WORLD'S TALLEST STRUCTURES

Structure	Location	Date	Height (metres)
Warszawa Radio Mast	Konstantynow, Poland	May 1974	646
KTHI-TV	Fargo, North Dakota, USA	December 1963	629
CN Tower, Metro Centre	Toronto, Canada	April 1975	553
Ostankino TV Tower	near Moscow, USSR	1976	537
WRBL-TV 7 WTVM	Columbus, Georgia, USA	May 1962	533
WBIR-TV	Knoxville, Tennessee, USA	September 1963	533
Moscow TV Tower	Moscow, USSR		528
KFVS-TV	Cape Girardeau, Missouri, USA	June 1960	510
WPSD-TV	Paducah, Kentucky, USA		499
WGAN-TV	Portland, Maine, USA	September 1959	493
KSWs-TV	Roswell, New Mexico, USA	December 1956	490

THE SEAS: DEEP-SEA TRENCHES

Name	Location	Length	Depth (m)
Mariana Trench	W. Pacific	2,250	10,924
Tonga-Kermadec Trench	S. Pacific	2,575	10,850
Kuril-Kamchatka Trench	W. Pacific	2,250	10,542
Philippine Trench	W. Pacific	1,325	10,539
Idzu-Bonin Trench	W. Pacific		9,810
New Hebrides Trench	S. Pacific	320+	9,165
Solomon Trench	S. Pacific	640	9,140
Puert Rico Trench	W. Atlantic	800	8,648
Yap Trench	W. Pacific	560	8,572
Japan Trench	W. Pacific	1,600	8,412
Sound Sandwich Trench	S. Atlantic	965	8,263
Aleutian Trench	N. Pacific	3,200	8,100
Atacama Trench	E. Pacific	3,540	8,064
Palau Trench	W. Pacific		8,050
Romanche Trench	N-S. Atlantic	965	7,864
Sunda Trench	Indian Ocean	2,250	7,725
Cayman Trench	Caribbean	965	7,535
Ryukyu Trench	W. Pacific	1,040	7,505
Banda Trench	Banda Sea	240	7,360

ART: HIGHEST PAID PAINTINGS

Painting	Artist	Date	Price
Benois Madonna	Leonardo da Vinci	1914	£310,400
Aristotle Contemplating the Bust of Homer	Rembrandt	1961	£821,429
Ginerva de' Benci	Leonardo da Vinci	1967	£1,785,714
Portrait of Juan de Pareja	Velazquez	1970	£2,310,000
Juliet and Her Nurse	Turner	1980	£2,729,000
Seascape: Folkestone	Turner	1984	£7,470,500
The Adoration of Magi	Mantegna	1985	£8,100,000
Sunflowers	Van Gogh	1987	£24,750,000
Irises	Van Gogh	1987	£30,200,000
Les Noces de Pierrette	Picasso	1989	£32,900,000
Portrait of Dr Gachet	Van Gogh	1990	£49,100,000

the paint of the 'Big Wheel' but failed to stop it. Finally, the 'Big Arm' seized the 'Big Wheel' and brought it to a halt just short of the 'Shock-Wave Cannon'. Soaked and shivering, the crowd roared its approval.

prepares for combat in one of SRL's art-show destruction derbies. Its arch-enemy, the 600-kg catapult 'Throwbot' (inset) defends itself by hurling an upright piano while the pyromaniac 'Sprinkler from Hell' lights up the background.

QUEST

FROM HOT SPOTS FROM HELL

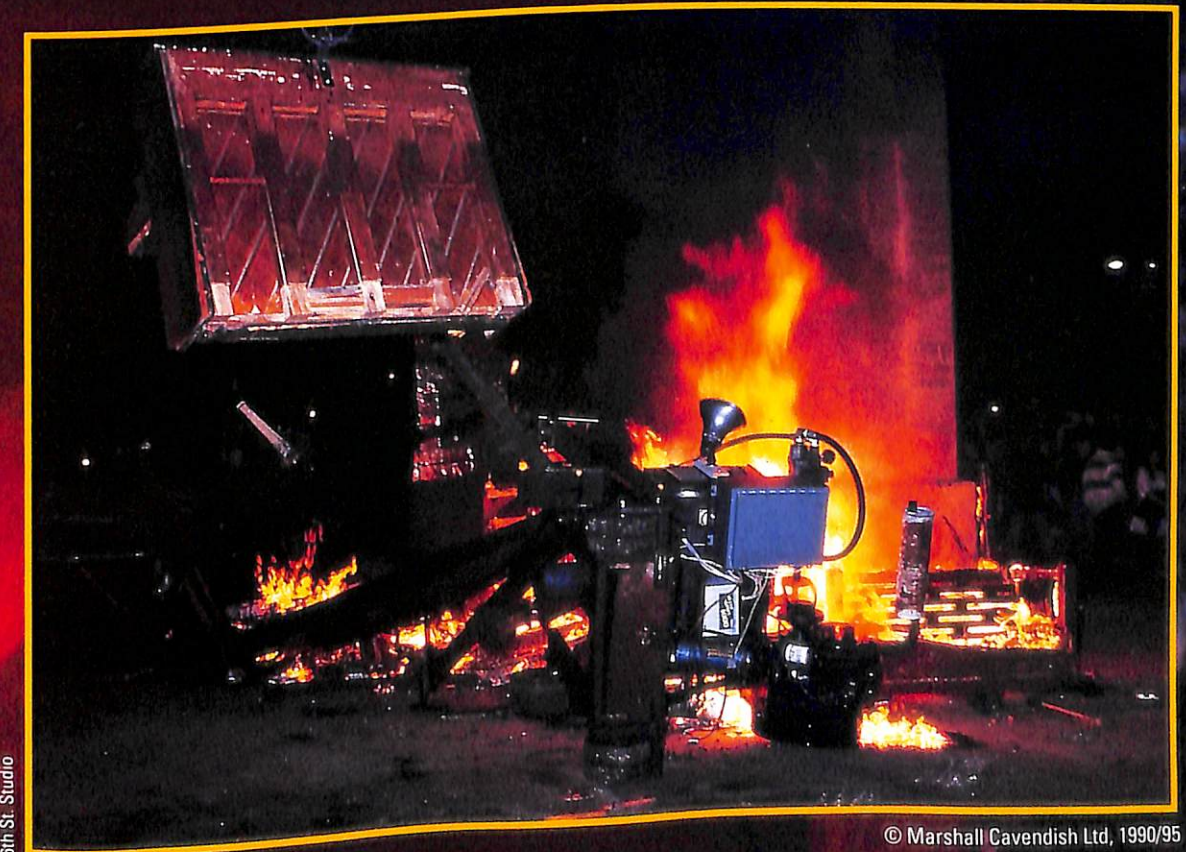
HIGH-TECH PERFORMANCE ART

THE ART OF DESTRUCTION

Survival Research Laboratories (SRL) of San Francisco creates action-packed art from hi-tech hardware scavenged from local laboratories and machine shops. One of the robots, called the 'One-Ton Walking Machine', looks like the lumbering skeleton of an elephant. Another, known as the 'Big Arm', resembles a cross between a mechanical excavator and a dinosaur. Some of the robots are controlled remotely by radio transmitters. Others have onboard brains consisting of programmable microprocessors.

On one occasion, a guinea pig encaged by a set of contact switches piloted a flame-throwing machine. Named the 'Sprinkler from Hell', it began life as an industrial sprinkler.

SRL's bizarre art is predictably unpredictable. This was demonstrated on one rainy night in 1988 in the car park of a sports stadium in Flushing, New York. 'The Walking Machine' bumped into the two-storey-high 'Big Wheel', a lethal-looking contraption made of welded oil drums. This set the 'Big Wheel' rumbling into a nearby lamp post. SRL technicians heaved the 'Big Wheel' away, only to send it lurching towards the 'Shock-Wave Cannon', a device that focuses the explosion of an oxygen-acetylene mixture into a shock front that can shatter glass over 30 metres away. A fiery blast from the 'Sprinkler from Hell' scorched



6th St. Studio

'Big Arm' - Survival Research Laboratories' three-metre-long, programmable robot.

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